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10197

NPIC/TDS/D-1053-67

3 October 1967

MEMORANDUM FOR THE RECORD

SUBJECT: Overrun on Project #10197, Viewgraph Maker [Contract
[redacted] and Project #10147, PI Print Enlarger
[redacted]

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1. The attached memoranda NPIC/TDS/D-1020-67 and NPIC/TDS/D-1050-67 present the background for the referenced projects.

2. On 27 September 1967 the following personnel visited [redacted] to discuss the anticipated overrun of the above projects: [redacted]

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[redacted] The following paragraphs present the events of the meeting in chronological order, with excerpts that compare past events with information as presented by [redacted]

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3. [redacted] presented an analysis of the Viewgraph Maker. He gave the following reasons why the overrun occurred:

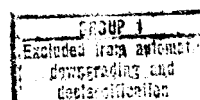
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3.1. The range of copy sizes and magnifications could not be accommodated by using the 10-15 Platemaster as originally stated in the contract. An 11-17 Platemaster (a larger model) had to be used and it required more modification than was anticipated. Redesign of the optical head, copy board, elevator mechanism, and film path was required.

3.2. Room light loading of the film required special design.

3.3. The reflex viewing port required special design.

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[redacted]**

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4. It was emphasized by NPIC personnel and agreed to by [redacted] personnel that these difficulties were not brought about by changes requested by NPIC after the contract was signed. The contractor was merely making design changes necessary to fulfill the terms of the original contract. [redacted] admitted that they had made a poor technical and financial estimate during the period of contract negotiations. [redacted] first monthly report dated 15 May 1967 already indicated an awareness of most of the design difficulties but predicted no overrun. By 16 June 1967 [redacted] had completed a layout study [redacted] drawing 115703) incorporating the necessary changes. [redacted] was asked why they had at that time not foreseen an overrun and warned us of its probability. They stated that their own cost accounting system (computerized) had not predicted any financial difficulties until August. [redacted] also mentioned that the control console was now to be a free standing, moveable unit instead of being affixed to the Platemaster frame. This change was agreed to by the Contracting Officer's Technical Representative on the basis that it would be more convenient and reduce costs. [redacted] stated at this meeting that this change had contributed to cost savings.

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5. A letter to [redacted] Agency Contracting Officer, dated 14 July 1967 refers to [redacted] first monthly report and amended the contract to approve the use of an 11-17 Platemaster, an increase in height and permission to deliver the second Viewgraph Maker one month after the delivery of the first unit. This latter agreement on the delivery was a concession to the contractor and should have assisted in reducing costs. A clause was included in this amendment by [redacted] stating, "This amendment will not affect the total target cost nor any other terms and conditions of the subject contract."

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6. [redacted] also mentioned the fact that [redacted] discontinued the production of their diffusion transfer material, 4427 and replaced it with a similar material, 2427. [redacted] was concerned that the new material would have different development requirements (time, temperature, etc.) and might cause some changes in the Viewgraph Maker design. Therefore, [redacted] spent time and effort in checking the development characteristics of the new material. The results indicated that the new material behaved similarly to the discontinued material, and no design changes were necessary. Nevertheless, [redacted] pointed out, time and thus dollars had been spent in checking out this important consideration. The PI Print Enlarger also uses the same diffusion transfer film and thus the study of the new material also served to answer the problem for that project.

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SUBJECT: **Overflow on Project #10197, Viewgraph Maker, [Contract**
[redacted] and Project #10147, PI Print Enlarger
[redacted]

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7. It should be mentioned at this time that since both projects use the same diffusion transfer material, they both had many of the processor parts in common. This should have benefitted both Projects financially since some of the design and drafting efforts for the processor of the Viewgraph Maker could have been applied directly to the PI Print Enlarger. [redacted] proposals and cost estimates were made two months apart and without the knowledge that both would be accepted. Thus their estimates must have been based on the presumption that only one proposal would be accepted and that the one project would have to bear all of the design, drafting, and development costs of the processor. Since both proposals were accepted, their engineering costs in this area should have been less than anticipated. This fact was not mentioned during the subject meeting with [redacted]

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8. When asked what steps could be taken to reduce costs, [redacted] mentioned that publications costs might be reduced if they spent less time on graphics preparations. They also suggested less time might be spent by [redacted] personnel in installing and start-up of the equipment at NPIC. However, we felt that this phase of the Project is critically important in developing a workable piece of equipment and preferred not to cut costs in that area. [redacted] also suggested that costs might be saved by reducing the quality of the delivered drawings. When NPIC personnel pointed out that there was no contractual requirement for drawings or prints, [redacted] still felt they might produce the remaining drawings at less than MIL. Spec standards but with adequate quality for use in producing parts.

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9. [redacted] presented an estimate of costs to complete (E.T.C. #2A) the project with a total of [redacted] for the overrun. Their estimate (E.T.C. #1) presented a month earlier was broken down into different costs. For instance, #1 predicts [redacted] as an overrun in direct labor hours while #2A predicts [redacted]. Material cost estimates likewise vary. Curiously, even though the subtotals differ, both estimates are exactly equal in their total estimated overrun [redacted].

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10. Below is presented some excerpts from [redacted] report of 31 May 1967.

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31 May "...IBP (Platemaster) purchased parts were received in part and basic dimensioning information was obtained for further design and modification of existing parts."

"The [redacted] light tables were received."

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Under Intended Progress During the Next Report Period:

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[redacted] and Project #10147, PI Print Enlarger

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"Complete all design efforts" (emphasis added)

"Release all items for procurement." (emphasis added)

This report is quite optimistic. It indicates they had received some parts, were aware of changes needed in others, and predicted no increase in cost. June's report does not reflect the completion of design and procurement as anticipated but predicts no increase in cost. On 11 August, [redacted] assured the monitor that there was no increase in cost. On 15 August, [redacted] project engineer for the Viewgraph Maker informed the monitor that there would be no increase in cost and hoped to actually be under the target cost. On 24 August [redacted] informed the monitor of the anticipated overrun. On 14 September, Mr. [redacted] said that all parts were nearly complete. However, [redacted] estimate dated 12 September to complete still shows 1,364 hours in engineers, designers, and draftsman time. At the 27 September meeting [redacted] indicated that many parts had not yet been ordered. Clearly, there is an inconsistency in the financial and technical progress as reported by the monthly reports (and verbal reports by [redacted] and the progress reported at the subject meeting.

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11. [redacted] estimates that another two months will be needed to complete the Viewgraph Makers.

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12. At the conclusion of the presentation by [redacted] we visited the assembly area to see some of the components of the Viewgraph Maker and the PI Print Enlarger. Very little assembly work had been completed. Several parts were examined, but it was not possible to ascertain what percentage of the parts had been received.

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13. NPIC personnel told [redacted] that their overruns were unreasonably high and asked them to consider all means possible to reduce these costs. We asked them to consider a corporate decision to absorb some of these costs since both the Viewgraph Maker and PI Print Enlarger, if made to the high standards suggested by [redacted] at this meeting, could probably be sold to other customers. We emphasized, however, that this was by all means their decision and we were not attempting to interfere in their company's policy. We also informed them of a new Agency policy to review all significant overruns. (An Agency audit will be made of all projects with [redacted] during the week of 2 October 1967. We did not inform the [redacted] personnel of this matter).

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SUBJECT: Overruns on Project #10197, Viewgraph Maker (Contract
[redacted] and Project #10147, PI Print Enlarger
[redacted])

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14. [redacted] presented a review of the PI Print Enlarger.
He gave the following reasons why the overrun occurred:

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14.1. Both 10 inch wide and 20 inch wide diffusion transfer material must be utilized by the equipment.

14.2. An automatic exposure control was needed.

14.3. Film chips had to be accommodated for viewing.

14.4. Room light loading of film required special design (this is really the same problem expressed in paragraph 3.2.).

14.5. Adjustable masks rather than fixed masks were required.

14.6. The condenser lens cost considerably more than originally estimated.

14.7. Discontinuance of [redacted] 4427 material required effort to check development characteristics of substitute material. (This is the same problem expressed in paragraph 6.).

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15. [redacted] was reminded that most of the above items were recognized in the original contract negotiations. The only change requested by NPIC was #14.5. This change was made as the result of a request by IAS for adjustable masks. [redacted] indicated at that time that it would incur no increase in cost. At that time, [redacted] also requested a revision of the exposure time expressed in the contract as "less than one second" to ".5 to 2 second range." This revision should have eased some of their technical problems while not significantly affecting machine performance.

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16. [redacted] third monthly report, dated 31 May 1967 stated that the lens turret assembly had been released for procurement, mirrors had been ordered and circuit drawings had been started. Their report dated 30 June 1967 states that all mechanical design work has been completed and the circuit drawings are being finalized. Procurement during the July

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[redacted]

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reporting period was at 75 per cent. On 11 August when the Contracting Officer's Technical Representative discussed the anticipated overrun with [redacted] he was informed that only 25 man days (200 man hours) of design and drafting were needed to finish the job and that most of the parts had been ordered. However, [redacted] stated that Engineering effort at the present is only 85% complete, design and drafting only 80% complete and manufacturing only 35% complete. The present project status is much less than stated in the monthly reports.

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17. In the estimate of costs so complete made by [redacted] on 12 August they estimate an overrun of [redacted]. Their estimate dated 22 September also predicts this exact amount but arrives at it with different subtotals and the insertion of an overtime premium charge that was not included at all in the first estimate.

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18. [redacted] entered the meeting and gave his version of why costs had risen. He stated that a viewer had recently been built by [redacted] that performed below the expectations of both [redacted] and the customer. Resolving not to duplicate the same mistakes, [redacted] spent considerable design time and effort in improving the design of the equipment of the subject projects.

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19. Two [redacted] personnel, [redacted] are no longer assigned to the projects. [redacted] has been transferred to a research group and [redacted] has been removed from the responsible position he once held. Without mentioning the names of these gentlemen, NPIC personnel questioned whether poor technical or economic decisions could have been made by personnel who were no longer assigned to this project. [redacted] answered by saying that technical personnel are assigned to a job when their individual talents are needed and removed when they are no longer required.

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20. [redacted] has presented various reasons for their anticipated overrun. [redacted] however, was cognizant of nearly all of these items during the time of contract negotiation. They were more aware of them after a few months of design and drafting effort. Yet they failed to anticipate even a small overrun until they had spent nearly all of the target costs. Their monthly reports are not consistent with the information presented at the 27 September meeting. The following alternatives seem most plausible.

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and Project #10147, PI Print Enlarger

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20.1. [] cost accounting systems are inadequate.

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20.2. [] deliberately withheld the correct cost information.

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20.3. [] honestly felt that the projects were technically and financially on schedule. At a later date, technical problems were more difficult than originally anticipated and caused more costs.

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21. Early during the week of 2 October, [] plans to visit NPIC to deliver additional cost information and possible areas for reduced costs.

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[]
 Technical Monitor

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CONCUR:

DATE:

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Attachments: NPIC/TDS/D-1020-67
 NPIC/TDS/D-1050-67

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